

CLAIMS

1. A colloidal dispersion comprising particles of a cerium compound, an acid and an organic phase,
5 characterized in that it further comprises a compound of at least one element selected from rhodium and palladium.
2. The dispersion as claimed in claim 1,
10 characterized in that it comprises particles of a compound of cerium and of another rare earth.
3. The dispersion as claimed in either of claims 1 and 2, characterized in that it comprises particles
15 of a compound of cerium, optionally of another rare earth, and of iron.
4. The dispersion as claimed in one of the preceding claims, characterized in that the content of
20 the abovementioned element is not more than 5% with respect to the combination of the elements cerium, other rare earth and iron of the abovementioned particles.
- 25 5. The dispersion as claimed in one of the preceding claims, characterized in that the content of the abovementioned element is not more than 0.5% with respect to the combination of the elements cerium, other rare earth and iron of the abovementioned
30 particles.
6. The dispersion as claimed in one of the preceding claims, characterized in that the compound of the abovementioned element is bound to the particles.
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7. The dispersion as claimed in one of claims 3 to 6, characterized in that it comprises cerium in a proportion of not more than 50%, more particularly not

more than 20% in moles of cerium oxide CeO_2 with respect to the total number of moles of cerium oxide and iron oxide Fe_2O_3 .

5 8. The dispersion as claimed in one of claims 2 to 7, characterized in that the other rare earth is selected from lanthanum and praseodymium.

9. The dispersion as claimed in one of the
10 preceding claims, characterized in that the acid is an amphiphilic acid.

10. The dispersion as claimed in one of the preceding claims, characterized in that at least 90% of
15 the particles are single crystal particles.

11. The dispersion as claimed in one of the preceding claims, characterized in that the particles have a d_{50} of between 1 and 5 nm, preferably between 2
20 and 4 nm.

12. A method for preparing a dispersion as claimed in any one of claims 1 to 11, characterized in that it comprises the following steps:

25 a) an aqueous mixture is prepared comprising at least one cerium salt, optionally a salt of a rare earth other than cerium and an iron salt, and a salt of at least one element selected from rhodium and palladium;

30 b) the aqueous mixture of step (a) is contacted with a basic medium to form a reaction mixture of which the pH is maintained at a basic pH, thereby producing a precipitate;

35 c) the precipitate thus obtained is contacted with the acid and the organic phase, to obtain an organic colloidal dispersion.

13. The use of a colloidal dispersion as claimed

in any one of claims 1 to 11, as a fuel additive for internal combustion engines.

14. A fuel for internal combustion engines,
5 characterized in that it is obtained by mixing a
standard fuel with a colloidal dispersion as claimed in
any one of claims 1 to 11.